



**THE DATASHEET OF  
BFCV-3350+**

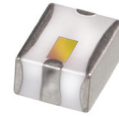


Ceramic

# LTCC Bandpass Filter

BFCV-3350+

50Ω 2570 to 4130 MHz



Generic photo used for illustration purposes only

CASE STYLE: JV1210C

## The Big Deal

- Small size 3.2mm x 2.5mm
- Wide passband (2570-4130 MHz)
- Low Insertion Loss (1.5 dB typical)
- Wide stopband rejection up to 8 GHz

## Product Overview

The BFCV-3350+ LTCC Band Pass Filter is constructed with multiple layers in order to achieve a miniature size and high repeatability of performance. Wrap-around terminations minimize variations in performance due to parasitics. These units offer low insertion loss and very good wide band rejection.

## Key Features

| Feature                     | Advantages  |
|-----------------------------|---|
| Small Size (3.20mm x2.5 mm) | Allows for high layout density of circuit boards, while minimizing effects of parasitics.                                   |
| Wrap around termination     | Provides excellent solderability and easy visual inspection capability.   |
| Wide bandwidth              | Enables high data rate in communication systems.  |
| LTCC construction           | Provides a rugged package that is well suited for tough environments including high humidity and high temperature extremes. |

### Notes

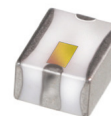
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# Ceramic Bandpass Filter

## BFCV-3350+

50Ω 2570 to 4130 MHz



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CASE STYLE: JV1210C

### Features

- Small size
- Temperature stable
- Hermetically sealed
- LTCC construction

### Applications

- Software defined radio
- WLAN
- Cellular network
- Satellite television broadcast
- Aircraft radar altimeters

### Electrical Specifications<sup>1,2</sup> at 25°C

| Parameter        | F#             | Frequency (MHz) | Min.      | Typ. | Max. | Unit |    |
|------------------|----------------|-----------------|-----------|------|------|------|----|
| Center Frequency | —              | —               | —         | 3350 | —    | MHz  |    |
| Pass Band        | Insertion Loss | F3-F6           | 2570-4130 | —    | 1.5  | dB   |    |
|                  | Insertion Loss | F4-F5           | 2650-4030 | —    | 1.5  | 3.5  | dB |
|                  | VSWR           | F3-F6           | 2570-4130 | —    | 2.3  | —    | :1 |
| Stop Band, Lower | Insertion Loss | DC-F1           | DC-1900   | 14   | 17   | —    | dB |
|                  | Insertion Loss | F2              | 2065      | —    | 17   | —    | dB |
|                  | VSWR           | DC-F1           | DC-1900   | —    | 20   | —    | :1 |
| Stop Band, Upper | Insertion Loss | F7-F8           | 5140-8000 | 15   | 20   | —    | dB |
|                  | VSWR           | F7-F8           | 5140-8000 | —    | 20   | —    | :1 |

1. Measured on Mini-Circuits Characterization Test Board TB-946+

2. This filter is not intended for use as a DC Blocking circuit element. In Application where DC voltage is present at either input or output ports, blocking capacitors are required at the corresponding RF port.

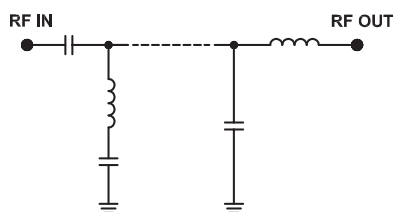
### Maximum Ratings

|                       |                 |
|-----------------------|-----------------|
| Operating Temperature | -55°C to 100°C  |
| Storage Temperature   | -55°C to 100°C  |
| RF Power Input*       | 4 W max @ +25°C |

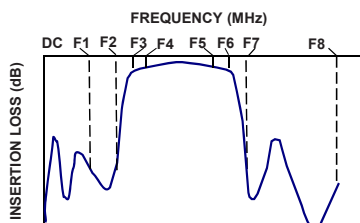
\*Passband rating, derate linearly to 0.25W at 100°C ambient

Permanent damage may occur if any of these limits are exceeded.

### Functional Schematic



### Typical Frequency Response

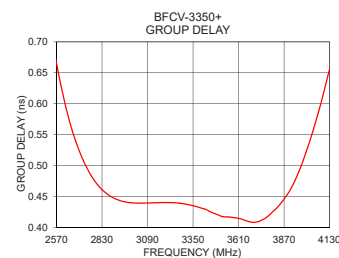
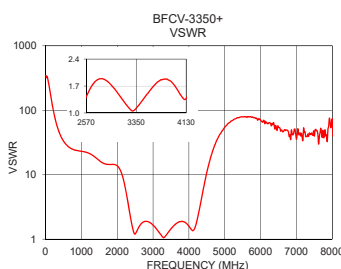
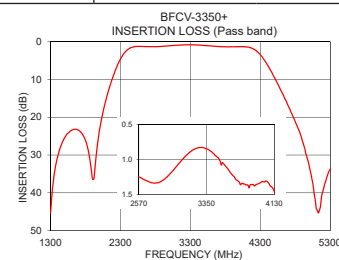
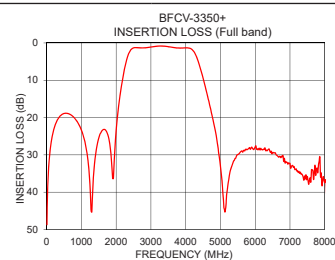


### Typical Performance Data at 25°C

| Frequency (MHz) | Insertion Loss (dB) | VSWR (:1) | Frequency (MHz) | Group Delay (nsec) |
|-----------------|---------------------|-----------|-----------------|--------------------|
| 10              | 48.70               | 345.89    | 2570            | 0.67               |
| 1900            | 36.32               | 14.43     | 2580            | 0.65               |
| 1960            | 29.02               | 14.17     | 2600            | 0.62               |
| 2000            | 23.59               | 13.72     | 2650            | 0.57               |
| 2040            | 19.59               | 12.99     | 2700            | 0.52               |
| 2065            | 17.49               | 12.34     | 2750            | 0.49               |
| 2200            | 8.96                | 7.24      | 2800            | 0.47               |
| 2340            | 3.39                | 2.70      | 2900            | 0.45               |
| 2570            | 1.25                | 1.42      | 3000            | 0.44               |
| 2650            | 1.30                | 1.69      | 3350            | 0.44               |
| 3350            | 0.85                | 1.12      | 3500            | 0.42               |
| 4030            | 1.31                | 1.50      | 3600            | 0.42               |
| 4130            | 1.46                | 1.37      | 3700            | 0.41               |
| 4280            | 3.06                | 2.67      | 3800            | 0.42               |
| 4600            | 13.12               | 18.05     | 3900            | 0.46               |
| 4780            | 20.31               | 34.49     | 3950            | 0.49               |
| 4960            | 30.12               | 50.63     | 4000            | 0.53               |
| 5140            | 44.89               | 64.88     | 4030            | 0.55               |
| 7000            | 32.29               | 35.51     | 4100            | 0.62               |
| 8000            | 37.45               | 72.31     | 4130            | 0.66               |

### +RoHS Compliant

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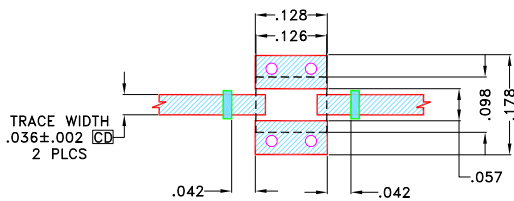


## Pad Connections

|        |     |
|--------|-----|
| RF IN  | 1   |
| RF OUT | 3   |
| GROUND | 2,4 |

Product Marking: HS

Demo Board MCL P/N: TB-946+  
Suggested PCB Layout (PL-502)

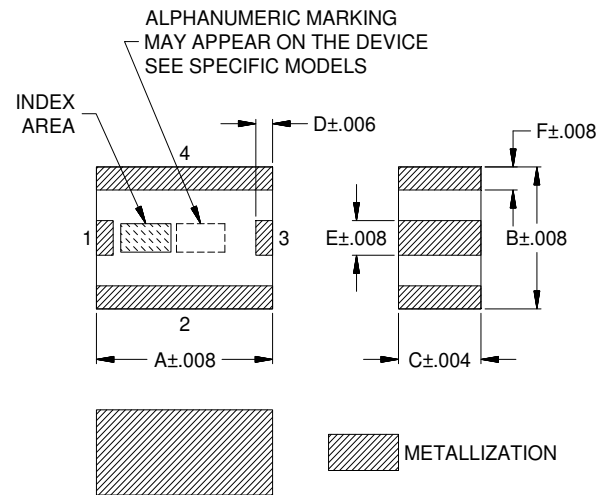


### NOTES:

- TRACE WIDTH & SPACE WIDTH IS SHOWN FOR ROGERS (R04350B) WITH DIELECTRIC THICKNESS  $.0166 \pm .0015$ ". COPPER 1/2 OZ. EACH SIDE FOR OTHER MATERIALS TRACE WIDTH & SPACE WIDTH MAY NEED TO BE MODIFIED.
- BOTTOM SIDE OF THE PCB IS CONTINUOUS GROUND PLANE.

- DENOTES PCB COPPER LAYOUT WITH SMOBC (SOLDER MASK OVER BARE COPPER)
- DENOTES COPPER LAND PATTERN FREE OF SOLDERMASK

## Outline Drawing



### Outline Dimensions ( $\frac{\text{inch}}{\text{mm}}$ )

| A    | B    | C    | D    | E    | F    | Wt.   |
|------|------|------|------|------|------|-------|
| .126 | .098 | .059 | .012 | .024 | .016 | grams |
| 3.2  | 2.5  | 1.5  | .3   | .6   | .4   | .03   |

Note: Please refer to case style drawing for details

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